A STATEMENT

EXPLAINING THE

COURSE OF INSTRUCTION

ADOPTED AT

THE MEDICAL SCHOOL,

IN HATTON GARDEN;

AND COMPRISING

SOME CURSORY HINTS TO MEDICAL STUDENTS

ON THE EMPLOYMENT OF THEIR TIME.

By WILLIAM GREVILLE JONES.

Affert maximè lumen memoriæ Ordo.
CICERO.
Scientiæ omnigeni et judicii, Ordo ferè maxima pars.
GREGORY.

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A STATEMENT,

&c.

Though an account of the method of instruction adopted in a particular establishment may not at first sight promise much matter of general interest, and though many will be inclined to think that there is no room for novelty in a department of teaching which has long occupied the attention of highly gifted individuals, yet I indulge a hope that the following observations may not be found entirely useless to the young medical student. It is true they are hastily penned, but are not the product of hurried reflection,—they are such as have often recurred to my mind.

I do not recollect that any one who has undertaken the practical instruction of students of medicine and surgery has attempted to throw a glance over the general field of the pathological sciences, and endeavoured to point out distinctly the bearing one has on another—the order of precedence which should be allotted to them—the relative proportion of a student's time they should respectively occupy, or the methods by which they may be taught most successfully. Yet such a sketch must be highly necessary and advantageous; for how useful must it be to offer the student the connexion that exists between multifarious and remotely separated facts and opinions, when he is himself unprepared for the task?

and how careful should we be when the time allotted to medical education is short, (and generally speaking it is far too short) that it should be sedulously husbanded and carefully regulated. Without pretending to furnish the sketch in question, I shall indicate, in a general way, some important points connected with it.

I. Under the term Therapeutics we may embrace that leading division of the sciences which is occupied with the preservation of the life of man. Its division into Anatomy, or the knowledge of the parts of the body; into Physiology, or the uses of those parts; into Pathology, or the knowledge of disordered movements; and into Therapeutics, (using the term in its confined sense) or the knowledge of the extraneous agents that affect us—are too well known and established to require any description here; and we may confine ourselves to a brief announcement of the connexion that exists between them.

That anatomy is the basis of all other medical knowledge is a truism that has been repeated *usque ad nauseam*, in all places and by all persons. But the proposition is stated in too vague and general a manner: it requires some qualification. Anatomy is clearly a part of physiology, because no one could be presumed to understand the movements of a machine until he had learned the parts which performed those movements. But it is proper to observe that anatomy means not only so much knowledge as is necessary to explain physiology; but a minute and particular knowledge of the form, dimensions, and relation of parts, in order to another purpose—the practice of surgery. And the word taken in these different senses implies two almost distinct sciences:

a knowledge of the intimate composition of structures, and a general view of the main parts which compose our fabric, form the whole portion of anatomy necessary as the basis of physiology, of pathology, and therapeutics: but the anatomy required for surgery is chiefly composed of a multitude of observations so minute, that they would indeed be ridiculous, were it not that the minutest and most accurate knowledge, even of a line's breadth, must be necessary to one who is called upon to cut through a system permeated with vital organs of the most diminutive size. To suppose that this kind of anatomy is necessary to medicine is absurd;—for instance, would it add to a physician's knowledge of the functions or diseases of arteries to know that a particular artery was exactly three inches in length, and had a vein on its outer and a nerve on its inner side? Yet how absolutely important to a surgeon.

The connexion between physiology and medicine is much more striking and apparent than that between medicine and anatomy; and the dependence which the second has upon the former, should, I conceive, be borne in mind in all the details of medical instruction, whether theoretical or clinical. Now, the value of physiology to operative surgery is very little; and it is only because every surgeon should be rather a pathologist than an operator, that that science comes to form an important part of a surgical education.

From these considerations it appears that in a natural order of instruction a general view of the primary structures of our frame, of the movements they perform, and of the derangements those movements are liable to, should precede every other part of a

medico-chirurgical education; that afterwards minute anatomy, special physiology, and operative surgery should be taught together on the one hand, whilst on the other the principles and practice of medicine may be advantageously separated into one distinct course of lectures, and materia medica into another; but that as there is an intimate connexion between medicine and special physiology, continual references from the former to the latter are highly useful.

Midwifery is a science complete in itself, embracing a certain portion of minute anatomy, a peculiar series of surgical operations, and the application of ordinary pathological rules to the treatment of some diseases which custom has assigned arbitrarily to the accoucheur. It may be very naturally, therefore, insulated from the other parts of instruction, and no part of these need precede it except, as we have before stated, the anatomy of structures and general pathology.

II. To assign the proportion of a student's time that each of the above-mentioned sciences should respectively occupy would be a task almost unnecessary if we had unlimited time on our hands. In such a case it might be permitted to a teacher to indulge as long as he pleased in the illustration of his particular subject,—a plan not, perhaps, even in such circumstances, judicious, but at all events innocuous. But when we reflect that the majority of students who are educated at the metropolitan schools are young men from the country who know nothing of anatomy or physiology, or at most only what may have been learnt from a little cursory reading, no more of medicine than what may have been obtained by an occasional sleepy half hour's perusal of

Dr. Thomas, and of chemistry a mere smattering, it becomes of the first consequence to rescue their time, so brief and precious, from being wasted on matters of secondary importance, whilst that momentous instruction which is to render them of use to the community, and which can only be acquired while they are students, is neglected.

The circumstance that the details of medicine, the nature and properties of the materia medica, the speculative doctrines concerning menstruation, conception, and so on, the collateral sciences of botany, and the like, may all be acquired very well from books, suggests to us at once that if some portions of them be neglected in a surgeon's preliminary education, the loss is not irreparable. But on the other hand it is as obvious that since anatomy and operative surgery (in which may be included the practical part of midwifery) can only be learnt by dissection and demonstration, he who neglects these during his attendance on the schools is likely to remain an ignorant practitioner during life; for, engaged in the duties of practice, it is impossible, even were he resident in a convenient spot, he could attend demonstrations; and dissections, besides requiring much time, cannot be performed by an individual, partly from the difficulty of procuring subjects, and still more because one person can do nothing alone with a subject when he has got it.

This consideration shows that the time devoted to the study of anatomy and surgery should far predominate over that allotted to the other branches of education; but a far stronger reason may be derived from the circumstance, that those sciences are of far greater extent than any other, except medicine, and that they contain a greater number of *certain* facts even than

this. But, moreover, a great proportion of medical knowledge is referential; a case of unusual aspect occurs, and a physician may consult books or hold consultations. He has time for reading and reflection. But a surgeon is brought into a room where a man has cut his throat, or has been stabbed in the groin. If his anatomy and surgery have not been rivetted, aye, welded into his brain, so that every thing to be done springs up clearly before him, of what use is he?

With all this, I see no reason to extend the time usually occupied at present in the teaching anatomy, either as regards the separate lectures, or the whole course of them. Not that, certainly, much more might not be said than is said, but I come of a school where it was taught, that not what we eat, but what we digest, makes us strong; and in truth, the brain's power of assimilation is very much like that of the stomach. So that in advising more time than usual to be devoted to the study of anatomy and surgery, I should rather advise it to be allotted to dissecting, and to delivering demonstrations, than to sitting for a longer time on the forms of the theatre.

It appears to me more essential that the length to which lecturers on other subjects are carrying their courses should be discouraged. In the first place, what can be more intrusive on the short time some have to devote to the study of their profession, than having to hear very frequent lectures on chemistry and on botany? Except to analyze poisons, or some animal matters, I see nothing a surgeon can want with chemistry, inasmuch as he never, in the first instance, prepares his own drugs; this business having got into the hands of a set of tradesmen, who do it far better than ever the apothecaries did.

What wants he to know of botany? He does not gather his own simples. These things must be learnt, it is true, but they should not occupy so prominent a station.

The same objection may be made to midwifery. Though this branch of surgery is of the utmost consequence,—important in itself, because it deals with very nice and difficult operations, and important in relation to other departments, because it is so frequently called into action,—yet it is *but* a branch of surgery. Its principles are all clearly established; the subject more completely exhausted than any other; no opposing testimonies are to be weighed, no conflicting opinions reconciled, no errors exposed. All is settled, all may be reduced to a comparatively small number of dogmatic axioms. How then can a course of lectures daily for three months on this subject be filled up? By iteration and reiteration, until all the weight that may be given to a principle by occasional repetition is lost; by anecdotes of little wit and less decency; and by a loose and careless style of language. *

No objection to a great many lectures on medicine could be made, were it not that medicine is a science which requires more than hearing lectures; it requires a very extended course of reading, and patient habits of observation and reflection. To teach all that would be proper to form an accomplished physician, five hundred lectures would scarcely suf-

* I am not of course prepared to deny, that there are many obstetric teachers who lecture very frequently, and who nevertheless fill up the course with valuable matter; but I affirm that they cannot do this without wandering into subjects foreign to their immediate province, or without inducing the student to neglect information more vitally essential to him as a general practitioner.

fice; and therefore it is prudent to inquire, how far shall we go into this intricate and extensive science? Before we enter boldly on the task of cramming the student with all the details that can be ejaculated in a given time, were it not better to inquire how much is likely to be retained? We shall then learn to confine ourselves to the exposition of the method of studying medicine; of those principles which are of most general application; of those diseases which are the most frequent, or over which medicine has the greatest control; and of those remedies which are most potent, and well established: referring for rare, ill-understood, and intractable cases, doubtful and hypothetical speculations, and disused remedies, to original authors. By such a procedure, we may hope that the student's mind, unencumbered with the dross, may retain what is essential. At the same time it will be observed, that this method, without interfering with the study of anatomy, by no means precludes us from laying before the student the sources whence, in future life, he may arrive at the highest attainments in medical literature.

III. Of the method by which the medical sciences should be taught, it may appear presumptuous to speak very confidently; but I am induced to bring it fully before the student, because I think nothing can be more useful to him than its consideration. By this he learns to systematize his own knowledge; he is enabled to reduce every fact he hears or reads to its proper place in the memory; admitted, as it were, into the science of teaching, he acquires a facility of learning; and, what is perhaps of more consequence than all, he is capable of detecting the deficiencies of his instructor. Hence an extended syllabus appears to me a necessary part of a course of lectures on any subject.

The first and most important point in the art of teaching is *arrangement*. Our mind is incapable, without the greatest effort, of recalling a dozen insulated ideas; yet has the power, when our thoughts are duly set in order, of apprehending and permanently retaining the thousands of facts and the long chain of multitudinous inferences, which form a science. Arrangement is not only that which renders knowledge easy and beautiful, but even possible. It is this which marks at once the line that separates productions that live, from those which hold but an ephemeral existence. Unless great powers of arrangement were apparent in it, what book of any length has been long or generally perused. If this be true of writing, how much more strikingly must the necessity of arrangement be apparent in the composition of oral discourses, to which the hearer has no opportunity of recurring, in order to form from the chaotic mass a system of his own.

There have been two principles of arrangement generally resorted to by philosophers. The first, which may be termed metaphysical, classes information under different heads, according to the *particular powers of the mind* that are exerted on them. I dismiss this with one assertion,—viz., there is no science in which *all* the mental powers are not exerted. The second mode, which has been more generally followed by systematic writers, and which has caused much puzzling of wise heads, there is no proper name for, but it is usually designated as the philosophic, or scientific method. It proceeds to place the materials of a science in the order suggested by the *analogies that things themselves have with one another*. With writers on a large scale on abstruse or crude knowledge, this was often very use-

ful. The division of natural philosophy into the mineral, vegetable, and animal kingdoms, may be mentioned as an example. It was when this method came to be applied to sciences conversant with the practical business of life, that its utter inadequacy became apparent.—It gave rise to the present established method of describing every process of each bone in the body, then every muscle, then the arteries, then (the bony processes and foramina being perhaps forgotten) the nerves; lastly, the viscera, and the senses. Applied to surgery, the method in question had its defects still more glaringly exhibited,—injuries were so disjointed that perhaps a fracture was described at one end of a book and a dislocation at the other, though both affected the same parts, and both were so similar in symptoms that minute observation was necessary to detect their differences.*

* Of these scientific arrangements, perhaps the most laboured and the most ludicrous is that adopted by the very erudite and accurate German surgeon, Chelius, in his *Handbuch der Chirurgie.* He, mistaking the analogies between words for those between things, fancying that because from some one similar circumstance diseases have been called by a similar name, they are therefore to be classed together as connected, has made the following curious blunders: — 1. He makes a classification of "foreign bodies brought into the organization from without," and here very naturally collocates *a pea in the nose* with "arsenic in the stomach," both these *coming from without.* 2. He has a class of "bodies *retained* in the natural cavities," which obliges him to club together *ranula* and *difficult labour*, both these affections consisting in a *retention;* and under the same head we find *sanguineous swelling on the head of a new-born child*, and *collections of blood in joints.* In another class we find *bronchocele* immediately preceding *enlarged clitoris*, and this succeeded by *callus* and warts.

Now the error Chelius falls into is, supposing that there is any use in marking the analogy existing between *all* strictures, *all retentions*, and all introductions of bodies from without. An

The above mentioned laboured method of arrangement the majority of mankind have never fallen much into, and those philosophers who have done any thing materially conducive to the substantial progress of science have neglected. These have taken a third method, which consists in bringing together such propositions as tend to a *particular practical purpose*. Ordinarily, men treat of things just as they are subservient to one use, and no one troubles himself to introduce propositions that have nothing to do with the notions he proposes to enforce. Many lecturers who have been engaged in active practice, and who troubled themselves little with studying principles of arrangement, have adopted this method in many parts of their discourses as being most convenient to themselves. But I contend that it is of universal application to all parts of medicine, and that it is just as beautiful and scientific (seeing that a natural arrangement is a phantom of the imagination) as any other. Every scheme is arbitrary, and that therefore the best which will effect the greatest practical good. The right basis then of every arrangement of lectures belonging to medicine or surgery, should be the use it will be of in practice.

The next great principle in the art of assisting the memory is to *connect particular into general conceptions*. Suppose a ship-builder were asked to describe a vessel, he would not begin, like a common sailor, first with this and then with that rope; now speaking of a mast, then an anchor, then a deck, and last a gunwale; but he would

analogy exists it is true, but only in one trivial point—the name, and to draw a student's exclusive attention to this is at all events useless; and, in as much as it diverts his attention from more important analogies, highly mischievous.

say, we divide our ship into hull, masts, and rigging; taking each division, he would farther describe the number of decks, or horizontal partitions, and then the quarters or artificial ones, into which the hull is divided, and would probably describe the most remarkable points belonging to each; passing to the rigging, he would beg you to observe that there were a set of ropes to strengthen the masts, another set to furl and steady the sails; and then would describe the particular ropes of which those sets were composed; and thus any person of common capacity might comprehend at once the complicated structure of the vessel. To apply another example from anatomy, would you enumerate the parts of the brain, (not properly, but according to the established method) you would have to remember—say fifty separate points. Now make this division: 1. Of what may be seen by removing the skull-cap, &c., previous to opening the lateral ventricle. 2. Of what may be seen *in* the lateral ventricle. 3. Of what *beneath* and *behind* it. 4. Of what is seen in and behind the third ventricle. 5. Of what is seen in the fourth ventricle. 6. Of what is seen at the basis of the brain. Now each of these divisions contains no more particulars than may readily be remembered, and they embrace every thing; but who can be certain of the unconnected fifty as they are described in anatomical books? It is well then, I say, to make resting-places for the memory.

The reader will observe in the preceding examples, that though the arrangement of the brain must give great facility to the remembrance of a number of dry facts, yet that the ship-builder's account of his machine is far better. This arises from the cir-

cumstance that he is enabled, besides naming the parts of his ship, to describe their *uses*. And there is such a natural tendency in our minds, even while children, when we see any thing, to ask what it is for, that use and existence seem almost inseparable ideas, which mutually rekindle each other. When, therefore, physiology, or the use of parts, can be added to anatomy, how easy and amusing does the latter become.

The next principle in the art of assisting the memory is to *bring into play the powers of association.* There are in almost every science a great number of insulated facts that have no connexion with one another, nor, indeed, with any thing else, to which it is impossible to apply the principle laid down in the preceding paragraphs, of collecting them into general propositions, and with which, therefore, we proceed by a different method.

There is in our brains a power of associating ideas together automatically and almost involuntarily, which is of infinite use in the business of life. Every one is aware that often when a trivial subject is mentioned, a thousand ideas at once spring up in the mind spontaneously, without effort and often against the will. Upon tracing the mode in which these thoughts became originally engendered, we find them to be the offspring of repetition, created, in the first instance, by accident, and rendered almost a component part of the mind solely by their frequent recurrence. By this power a man walking often about London learns every square, street, and alley of this huge metropolis without knowing how he acquired his information, which yet is so extensive and accurate that it would have taken him many months of arduous mental exertion to have

attained the same by studying from the map. By this power without (in our language,) any rule to guide us, we learn those numerous combinations of letters which constitute the art of spelling, an art, the extent of which we only underrate because we can acquire it with ease. Yet I may aver that it is so extensive, that by voluntary effort it could scarcely ever be accomplished. I appeal to those whose memory carries them so far back into their infancy that they can remember learning to spell. I ask them whether they ever could spell while the spelling-book was in their hands, and whether they ever acquired the least confidence in their orthography until, by reading for instruction or amusement many books, they had stamped the aspect of right-spelled words in their heads. By this power boys retain the multiplication-table, and by this alone is the recollection of *propria quæ maribus*, &c. possible. By this power all the drier parts of anatomy are attained without fatiguing or exhausting the mind, or diverting it from higher speculations. A student who will take up successively every part of the body after his teacher, and repeat its description and point out its situation, though he exert no effort of memory, yet he must of necessity learn anatomy. It is true, that some have adopted this method in instruction to the exclusion of every other, and thus have made anatomists who were, nevertheless, neither physiologists nor surgeons. Here I need scarcely say that it is only as subservient to a higher method of teaching by principles, and by combining fact with speculations and reasonings, that it is admissible.

The last principle that remains to be inculcated is, to apply a very common observation, namely,

that no one knows any thing until he can teach it. Hence the propriety of exacting from the student some testimonies of his having attended to what he has heard. I do not mean examinations, as they are called, but full repetitions of whole demonstrations and considerable portions of the lectures.

These appear to be the chief principles to be observed in medical instruction, and though the preceding exposition of them is very imperfect, it is, perhaps, better, in the place of drawing it out more fully, to show the scheme that we have framed upon them. The intelligent reader will immediately perceive that I introduce the lectures by six introductory discourses, in conformity with the proposition that general views should precede particular details; that throughout the whole course the use and description of a part is *immediately* followed by an account of its uses, and the surgical operations it may be liable to, because things naturally connected (and we have shewn that all things leading to a practical purpose are so) should be taught at the same time. He will notice that we have divided the body arbitrarily into regions, both in the medical and anatomical courses of lectures. This plan has been adopted by us in conformity with our main principle, that sciences should be arranged solely with a view to their end; and it appeared to us that this division of the body was more likely to assist the memory of the surgeon or physician in *practice* than any other.

Thus we discarded any arrangement founded on the French observations on the connexion of mucous membranes; not considering it likely that a man would mistake a snuffling of the nose for a gonorrhœa, or a chronic gastritis for catarrhus vesicæ; but there seemed great fear that a careless student *might*

mistake a pain in the belly or chest for very different and opposite affections,—that he might mistake a fracture of the neck of the thigh bone for a dislocation of its head, or an inguinal hernia for a bubo. So observing that a surgeon about to tie an artery in the leg was not the more competent to this because he knew all the arteries of the arm and trunk, but that the knowledge he wanted was a recognition of all the muscles, fasciæ, nerves, veins, and arteries that were in that particular spot whereupon he had to operate, we found a reason for rejecting the arrangement of the body into systems, that is in use in our schools. The division of the body into regions has, in addition to the recommendation we have mentioned, some others. 1. It does not require us to presume that any thing of anatomical or medical science is known to the student previous to this course. 2. It does not disjoin altogether physiology from anatomy: the *chest* being the seat of the circulating and respiratory systems, the abdomen of the digestive system, the pelvis of the reproductive system, &c. 3. It is very convenient for anatomy, inasmuch as it enables us to display every thing on the recent subject, and saves waste. Nor, now I am upon this, do I think it a contemptible recommendation of this method that it habituates the student to think of the *whole* anatomy of a part at once.

With respect to the following syllabuses it may be proper to mention, that whatever of union between various departments may be observed, has arisen from the general co-operation of every lecturer in this school; but that as far as regards the filling up of their respective details, each lecturer is individually responsible for whatever appears of merit or demerit in his own syllabus.

LECTURES ON ANATOMY, &c.,

By Mr. GREVILLE JONES,

Daily, from Half-past Two to Half-past Three o'clock.

INTRODUCTORY LECTURES.

1. The elementary parts and primary movements of living bodies.

a. The Vital Capillary Tube. Its powers, its universal agency throughout all animated nature—in the plant; in the zoophyte and lower animals; in the higher animals, in man. Its infinite diversity, its probable limits; the chief varieties it exhibits in the human body.—*b.* The Contractile Fibre. Its power; its obscure manifestation in the plant, its universal presence throughout animals, the laws it observes, the differences in its phenomena. Of its use as a locomotive power—as productive of intestinal movements.—*c.* The Nerve. Its functions, movent and sentient; and exciting chemical change, (examination of the mode in which it influences secretion and animal heat). The composition and function of ganglia and brains.

It is now affirmed, 1. That the existence of the above-mentioned powers rests on the directest and most irrefragible evidence.—2. That they are found divided or combined in every living thing, from a mushroom to a man.—3. That their existence being granted, we may account for every vital phenomenon excepting such as belong to the human soul.—4. That no disorders or diseases are possible except they affect capillary tubes, muscular fibres, or nervous masses; and that no remedies are capable of acting on the body, except through the medium of those elementary parts.

It will next be shewn, in a general way, how the union of these elementary parts with each other, and with their own products are capable of forming all the more complicated systems, and they will be described generally in the following order:—1. General view of the digestive system.—2. A general view of the blood, the circulating and respiratory systems.—3. A general view of the locomotive system.—4. A general view of the senses and the voice.—5. A general view of the functions of the brain and an analysis of the mind.

II. Of the Blood. Its physical appearances, its chemical analysis, and its properties. Of the life of the blood.

Of the chemical analysis, physical appearances, and proper-

ties of the following structures:—*Cellular tissue, arteries, veins, muscular masses, nervous masses, ligaments, cartilages, bones, teeth, skin, hair, and nails.*

General surgical pathology.

Irritation. Defined to be disturbance in the action of nerves.—1. Increasing the sensibility, thereby causing pain.—2. Increasing their mobility, causing an extraordinary motion of the muscles they influence.—3. Increasing the action of vessels under their control, and thereby producing a higher temperature; or, 4. Exciting the remote organs which they hold in sympathy.

Inflammation. Defined to be increased action of red blood vessels, superadded to increased action of nerves. Its *local* phenomena. Their causes. The terminations of inflammation in deposition of lymph, formation of pus, gangrene, or chronic-morbid action. Of the *general* phenomena of inflammation. Sympathetic fever—its various types, irritative, typhoid, and hectic.

Of the phenomena of inflammation when attacking veins; arteries; muscles; serous and mucous membranes; the skin; the synovial membranes, cartilages, and ligaments; the bones.

Of the means that reduce inflammation and soothe irritation. 1. The local means—abstraction of heat—leeching, scarifying, cupping, counter irritation, blisters, moxa, acupunctuation. Of emollients.—2. General means to reduce the vascular system, viz. bleeding and purging; to tranquillize nervous system, viz. evacuants, regimen, narcotics, and stimuli.

Of injuries causing inflammation. Of wounds, their varieties and treatment — by straps, bandages, sutures. Of contusions, burns, freezings, sprains, fractures, and dislocations. Of the management of people just after severe accidents. Of stopping hæmorrhage.

Chronic Morbid Action defined to be circulation unnatural, generally increased; secretions, stopped or altered—how far to be considered as a modified inflammation. Its phenomena when attacking *arteries*, namely ossification, aneurism, *veins*, varix, *glands* and *absorbents*. Of chronic abscess, and chronic ulcer. Of tubercles. Of encysted and sarcomatous tumors. Diseases of bones—exfoliations, necrosis, node, exostosis, distortion. Recapitulation of all the opinions delivered on the preceding points.

III.—[The dry bones generally.]

IV. *The Abdomen.*

The special anatomy and physiology of the parietes—the peritoneum—the stomach and bowels—the liver—the spleen—the pancreas—the vessels, nerves, and absorbents of the abdomen. *Surgical diseases of the Abdomen.*—Wounds of the abdomen:—*a*, such as intersect the bowels—*b*, such as do not—*c*, punctured wounds—*d*, gunshot wounds. The operation of paracentesis abdominis—of opening abscess in liver. Herniæ—

ventral, umbilical, inguinal, and femoral. The operations for these complaints.

V. *Of the Pelvis.*

1. The special anatomy and physiology of the pelvis, pelvic viscera, and organs of micturition and generation. 2. Injuries to which these parts are liable. 3. The surgical diseases of these parts. Acute and chronic blenorrhæa—Chordee. Sympathetic bubo—Suppression of urine or dysuria—Phymosis and paraphymosis — Orchitis — Stricture — Diseased prostate, irritable bladder, fistula in perineo, fistula in ano, contracted and scirrho-contracted rectum—Prolapsus ani—Piles —Of their cure by ligature ; by extirpation—Of hernia at the foramen-ovale—Hernia at the sacro-sciatic foramen—Hernia through the cellular tissue in front of the rectum into the perineum—Chronic enlargement of testicle—Hydrocele, hœmatocele, sarcocele, fungus hæmatodes, and cancer of the testicle—Cirsocele and varicocele—Of castration, and amputation of the penis—Of puncturing the bladder—Of the operation of lithotomy—Of extracting polypi and other tumors from the uterus—Of excising that organ ; the Cæsarian operation—Of some other operations on the female organs.

VI. *Throat and Chest.*

The parietes of the chest—Muscles. Contents — Heart, lungs, pleura, pericardium. Vessels and nerves of those parts — Vessels and nerves passing through the cavity — Bronchus and trachea, larynx and pharynx, interior of mouth. Of the throat—Of the muscles below the os hyoides—above this bone—Of the vessels and nerves passing through those muscles — Vessels and nerves supplying them. *Surgical Diseases and Injuries of the above-mentioned parts.*—Of cut throats—Of what is to be done on the instant—Of the after-treatment—Of matters sticking in the œsophagus or larynx—Of laryngotomy and pharyngotomy—Of accidental injury to the pharynx—Of ranula—Of excision of the tonsils—Of snipping off the uvula—Of dividing frænum linguæ—Of taking off diseased portions of the tongue—Of restraining hæmorrhage.

Of broken ribs or sternum.

Of wounds of the thorax, superficial or penetrating, emphysema, extravasation of blood—Of puncturing the chest or the pericardium—Excision of the mammæ—Of a wry neck.

VII. *Of the Head and Face.*

Of the bones of the head and face—Of the superficial muscles of the face—Of the grinding muscles of the lower jaw—Of the scalp—Of the vessels and nerves of these parts—Of the brain demonstrated, 1st, according to the natural method ; 2d, according to the established method—The terminations and remaining description of the cerebral nerves—Of the circulation through the brain, and its movements—The parts into which the brain ought to be divided ; the use of those parts—The explanation thus afforded of all possible thoughts and feelings.

Injuries of the head: 1st, simple contusion of the scalp, with extravasation above or below the occipito-frontalis tendon—Laceration of scalp—Of the sign of a separation of the dura-mater from the bones; 2. Fractures — Fissures—Fractures of both tables of the skull—Of the inner table only—Causes of fractures—Of the contre-coup—Of the depression of bone — 3. Concussion and compression; their distinguishing marks—Of the treatment of concussion—Of the folly of early bleeding—Of phrenitis—Of the time for depletion—The reason for trephining; the method of trephining—Of the sign of extravasation—Of the probable situation of extravasated blood under the skull when the bones are whole—Of trephining in those instances, and of puncturing the dura-mater—Of the treatment of persons recovering from injuries of the head—Of symptoms of irritation that may be mistaken for inflammation—Of the danger of this mistake—Of the tendency that exists in some who have had their heads injured to suppurations in the liver and lungs—Probable cause of these occurrences.

The Eye. — Its membranes, humours, vessels, nerves, muscles, and appendices—Of sight—Of the mode in which the eye informs us: 1st, Of the form of bodies; 2dly, Of their colours; and, 3dly, of their distances.—Diseases of the eye, divided into superficial and deep-seated: 1st, Superficial, affecting the conjunctiva and eyelids. *a.* Acute conjunctivitis (specific) as psorophthalmy, gonorrhæal ophthalmy, Egyptian ophthalmy—Chronic conjunctivitis—Deposition on conjunctiva, as nebula, albugo; ulceration of cornea, fungus, pterygium, and encanthus *b.* Of the eyelids, ectropium, trichiasis, entropium, ptosis.—Hare-eye, stye, the inflamed and indurated kinds. 2. Affections of the deep-seated parts of the eye:—*a. The iris.* Iritis, deposition of lymph on the iris, closure of the pupil—Of the operations for the relief of this complaint—Of collections of pus and water in the *chambers* of the eye—Of affections of the *chrystalline lens*—Cataracts — Of the vitreous humour, glaucoma—Of an affection of the optic nerve—Amaurosis, its two main varieties—Of fungus hæmatodes and cancer — Extirpation of the eye.

The Ear.—1. The outer portion. 2. The middle portion. 3. The internal portion—Sound—Of loudness and of tone—Of large and small vibrations—Of frequent and rare vibrations—Of the respective auditory powers of the portio mollis and the portio dura. *Diseases of the Ear.*—Hardened wax, inflammation, purulent discharge, polypi, obliteration of eustachian tube—Of the operation of puncturing the tympanum—Affection of the auditory nerves from alterations in structure —From nervous irritation.

VIII. *Of the Spine.*

Bones and ligaments—Muscles of the back, viz. *a*, those which connect the upper extremity with the trunk.—*b*. The serrati (respiratory muscles.)—*c*. The great mass that sup-

ports the back upon the pelvis.—*d.* The lesser which supports the vertebræ on each other.—*e.* The great masses in the neck which support the head on the neck.—*f.* The lesser muscles which perform nodding and rotation of the head—Muscles on the forepart of the spine—Of the union of all the nerves of the limbs and trunk in the spinal chord—Anatomy of the spinal chord, its vessels and connecting ligaments, its uses.

Injuries and surgical diseases of the spine—Fractures of the vertebræ—Of the spines—Of the arches—Mr. H. Cline's excellent operation of trephining the bone—Dislocations of the vertebræ—Of distortion—Of the means of remedying slight and recent distortions—Of the folly of using stretching instruments—Of the principles on which the cure of distortion is to be attempted—Of the use of setons—Of caries—Of abscess—Of psoas abscess—Of spina bifida—Of the attempts made towards curing this disease.

IX. *Lower Extremity.*

Recapitulation of the dry bones—The wet bones and ligaments, muscles, blood-vessels, nerves, and absorbents. *Injuries and Surgical Diseases of the Lower Extremity.*—Abscess beneath fascia, femoral and popliteal aneurisms—Operations on the arteries of the lower extremity—Strains of foot and knee joints—Fractures and dislocations.—*a.* Those happening about the thigh joint.—*b.* Fractures of the shaft of the femur.—*c.* Fractures and dislocations about the knee joint.—*d.* Fractures of the bodies of the tibia and fibula.—*e.* Fractures and dislocations about the ankle joint.—*f.* Fractures and dislocations about the foot—Of the growing in of nails—Of bunnions and chilblains—Of punctured wounds in the foot—Of amputations.

X. *Upper Extremity.*

Recapitulation of dry bones—Of wet bones, ligaments, muscles, blood-vessels, nerves, and absorbents—The nails—Mode of growth. *Surgical Diseases and Injuries of the Upper Extremity.*—Of the injuries that may follow bleeding—Inflammation of nerve, vein, absorbents or fascia—The operations of tying the subclavian, axillary, brachial, radial, and ulnar arteries—Amputation at the shoulder, through the arm, through the fore-arm; of the metacarpal bones—Amputation of the fingers—Of fractures.—*a.* Of the clavicle, scapula, and head of the humerus, and of dislocations of the humerus and clavicle.—*b.* Of fractures of the body of the humerus.—*c.* Of fractures of the condyles of the humerus, heads of the radius and ulna, and of dislocations at the arm joint.—*d.* Fractures and dislocations of the bones of the fore-arm and carpus—Of fractures and dislocations of the hand.

LECTURES

ON THE PRINCIPLES AND PRACTICE OF PHYSIC,

By Dr. UWINS and Dr. JAMES,

From Half-past Three to Half-past Four, Tuesdays, Thursdays, and Saturdays.

INTRODUCTORY LECTURE.

How far are the principles of medicine certain and useful.
Sketch of medical history.
The theories and practice of the present day.
Nosology *and* nomenclature.
Mode of studying medicine to the greatest advantage.

PART I.

General Pathology and Therapeutics.

Modes of diseased and disordered action—principles of restorative agency—Alterations of the fluids and the solids—Excitants. Depressing powers—Chemical and mechanical medicinals. Specifics—General qualifications of medicinal powers—modifying all abstract principles.

Chronic and acute diseases. General remarks on their respective characteristics.

Vascular, absorbent, and sentient systems—General habits of each. Membranous divisions of the body—how far admissible, and how far objectionable. Irritation as a distinct condition of disordered being.

Physiology, as introductory to the pathology of the vascular system—Inflammation—Kinds and degrees of this state. How modified by the cause which produces it—the texture it affects—and the condition of the individual. Phlegmon and erysipelas—Internal inflammations bearing one or the other character—Of the means that reduce or subdue inflammation. Bleeding, sedatives, counter-stimulants, &c.

Hæmorrhage allied to, and in what way differing from inflammation. Causes, treatment. Physiology, as introductory to the pathology of the lymphatic and absorbent systems.

The general affections of this part, more usually those of a chronic kind, and which authors have considered under cachectic, from the notion of depraved habit. Tabes Mesenterica—Scrophula—Rachitis—Mollities ossium—Dropsy—Tympanitic affection—Hectic fever.

Principles upon which metastatis and conversion of disorders are affected.

Physiology, as introductory to the pathology of the nervous and fibrous systems—Nervous disorders, how distinguished from, and how connected with, other diseases.

PART II.

Subdivision I.—*Febrile Diseases.*

How distinguishable from inflammatory and nervous affections, and how connected with them—Question of the locality of fever adverted to, and of its essential nature.

Rationale of a febrile paroxysm—cold—hot—sweating stages. Continued—intermittent and remittent fever—exciting causes? Laws of contagion and infection.—Species of fever?—Simple fever—typhus—plague—yellow fever. *Eruptive fevers.*—Measles—Scarlatina. Variola—Inoculation. Vaccinia—Vaccination. Varioloid diseases and varicella.

Subdivision II.—*Muscular and Membranous Diseases.*

Rheumatic and arthritic disorders, gout—Spasmodic affections unconnected with the cerebral system as a primary cause—Tetanus—Chorea—Epilepsy—Paralysis. These affections afterwards to be considered in their obvious connexion with the cranial and spinal brain.

PART III.

Of the Diseases and Disorders of the Abdomen and Pelvis.

Anatomy and physiology, general view of.

Stomach.—Sympathy between it and the brain, functions of, digestion—Morbid derangements—Dyspepsia—Gastrodynia—Cardialgia—Anorexia Pyrosis. Diseases of, spasm and inflammation—Distinguishing marks of acute inflammation—Gastritis—Gastro-enteritis—Hæmatemesis—Chronic diseases of—Morbid alterations of structure—Cancer—Scirrhus—Stricture.

Intestines.—Office—Structure and connexions of. Affections of the *duodenum* and colon, as distinguishable from other portions of the intestinal canal, and from hepatic derangement—Constipation—Diarrhœa—Enteritis, acute and chronic—Dysentery—Cholera—Colic—Ileus—Stricture—Intus-susceptio—Hæmorrhoids.

Peritoneum.—Connexion and reflexions of—Diseases—Peritonitis—Acute and chronic ascites—Tapping—Of pulsation in the epigastric region, tuberculated state of.

Liver.—Functions of—Healthy and diseased action—Icterus—Biliary calculi, varieties and chemical composition of—Hepatitis—Acute and chronic form of morbid alterations of structure—Abscess—Hydatids—Scirrhus—Tubercle—Granulated and scrofulous state of.

Spleen.—Chronic affections of—Ague cake—Tuberculated—Ossification of—Frequent connexion of this organ with tabes mesenterica.

Pancreas.—Functions and diseases of—Morbid degeneration.

Kidneys.—Structure and functions of—Diseases—Dysuria—Ischuria—Nephritis—Diabetes—Calculi—enlargement.

Bladder.—Acute and chronic affections of—Cystitis—Hæ-

maturia—Paralysis—Calculi—Varieties and composition of —Sacculated and thickened state of its coats.

Uterus.—Its important influence on disease—Amenorrhœa —Menorrhagia—Fluor albus — Leucorrhœa — Inflammation— Ovarial dropsy—Nymphomania.

PART IV.

Mouth, Throat, and Chest.

Subdivision I.

Anatomy and Physiology, general view of. Respiration, theory of various opinions relative to.

Of the mouth and fauces.—Inflammation of the gums, teething. Diseases of the salivary glands, tonsils, and glottis, spontaneous ptyalism, parotidæa. Aphthæ—Affections of the glottis, angina tonsillaris. Laryngitis, pharyngitis, cynanche trachealis—Croup—Bronchitis, acute and chronic—Bronchial concretions—Catarrh, varieties of—Asthma.

1. Of the Stethoscope, its use and mode of application. Of the phenomena deducible from respiration in health and disease. Of the respiratory murmur or râle of Laennec. Of the râle muqueux, sonore, sibilant, and crepitant. Of auscultation and percussion.

Pleura.—Diseases of; pleuritis, acute and chronic. Morbid exhalation—Hydrothorax—Adhesions—Ossifications.

Lungs.—Structure and functions of. Pulmonary concretions, varieties and composition of. Tubercles, nature and causes of. Pneumonia notha, expectoration, nature and varieties of—Pus and mucus, diagnostic marks of—Phthisis—Of the sanability of this disease, and the process of cure adopted by nature—Pneumo-thorax—Emphysema—Œdema—Hæmoptysis—Apoplexia-pulmonalis.

Heart.—Phenomena deducible from, in health and disease. Rhythm, irritability—Carditis, acute and chronic—Connexion with rheumatism, pericarditis, hydrops pericardii. Affections of the muscular structure. Enlargement of the heart generally, or affecting particular cavities—Hypertrophy —Atrophy—Ramollissement, abscess—Rupture—Polypi. Angina pectoris—Ossification of the valves, of the arch of the aorta and coronary arteries—Of some irritative affections of the cardiac nerves, and of the probability that these precede the majority of structural disorganizations in the heart—Of the long endurance of life and health in those who have structural without nervous disorder—Of the frequency of death from mere nervous disorder.

Of some disorders of the vocal organs—Stammering—Stuttering, œgophony, and pectoriloquy.

PART V.

Of the Head and Face.

a. Vascular affections—Inflammation of the brain—Common

and specific phrenitis—Arachnitis—Hydrocephalus, acutus et chronicus—Apoplexy, kinds and degrees of this last disorder—Softening of the brain—Epilepsy—Paralysis.—*b.* Nervous affections—Head-aches of various kinds—Tic doloreux—Partial paralysis of some muscles—Some curious spasmodic affections of the facial muscles—Insanity, its various kinds—Delusions of the senses—Optic spectra and muscæ volitantes—Tinnitus aurium—Fancied sounds, discourses, &c.

SUBDIVISION II.

Cutaneous affections—Remarks on modern classifications and nomenclature of these disorders—General pathology and principles of treatment—Division into topical and general affections—Mixtures and modifications—Concluding remarks on diagnosis and prognosis.

SYLLABUS

OF A COURSE OF LECTURES

ON

MATERIA MEDICA, PHARMACY, AND MEDICAL BOTANY,

BY JOHN B. JAMES, M.D., F.L.S.,

OF JESUS COLLEGE, CAMBRIDGE, THE ROYAL COLLEGE OF PHYSICIANS OF LONDON, PHYSICIAN TO THE WESTERN DISPENSARY,

CORRESPONDING MEMBER OF THE IMPERIAL ACADEMIES OF FLORENCE, PADUA, VIENNA, ROYAL INSTITUTE OF NAPLES, ATHENÆUM OF VENICE, &c.

AN essential knowledge of the Materia Medica depending on an intimate acquaintance with the effects of remedies on healthy and diseased action, the arrangement of these Lectures has been directed by a strict accordance with practical utility; the chief object of the Lecturer being to render them immediately subservient to the treatment of disease. A Lecture will be given at half-past three o'clock every Monday and Friday during the Session.

TERMS.

First Course, 2*l.* 2*s.*—Second Do., 1*l.* 1*s.*—Perpetual, 4*l.* 4*s.*

Specimens of drugs and plants, together with accurate drawings and tabular views illustrative of the subjects treated of, will accompany description.

Plan of the Course.

PART I.

Preliminary observations—Rise and progress of the Science—Impediments to—Influence of the mind on medical agents—Credulity—Superstition—Operation of the passions—General view of the animal œconomy—Life—Laws of vital action—Sympathy, habit, age, sex, temperament, and idiosyncrasy—Disease, effects of, often suspends the action of remedies.

PART II.

Of medical agents—Definition of—Nature, properties, and characters of—*Modus operandi* of medicines—Of their action by absorption—Decomposition—Course through the circulation.

Organs and tissues, definition and doctrine of—Classifications of medicines, divisions of into—

CLASS I.

General Remedies,

Or those acting

1st. On the general mass of blood, by diminishing its circulatory power; as,
- Venæsection.
- Sedatives.
- Antiphlogistic Regimen.
- Rest.

2ndly. Those increasing arterial force and muscular energy; as,
- Stimulants.
- Food.
- Tonics.
- Astringents.
- Exercise.

3rdly. Those whose operation is more particularly effected by nervous influence; as,
- Narcotics.
- Antispasmodics.

4thly. Remedies effectual, but of which the *modus operandi* is not evident to the senses; as,
- Alteratives.
- Contra-stimulants.

CLASS II.

Local Remedies,

Or those inducing an increased action in a particular part, by deriving it from another; as,
- Emetics.
- Purgatives.
- Diaphoretics.
- Diuretics.
- Epispastics.
- Sialogogues.
- Errhines.

CLASS III.

Chemical Remedies,

Or those whose operation is chiefly independant of vital influence,
- Antacids.
- Antiseptics.
- Lithontriptics.
- Escharotics.
- Refrigerants.

CLASS IV.

Mechanical Remedies,

Or those whose action is chiefly effected by mechanical means; as,
- Vermifuges.
- Demulcents.
- Diluents.
- Emollients.

Of dietetics—Bear the same relation to physiology as materia medica does to pathology—Medicine and aliment, connexion between—Of climate, effects of.

PART III.

Medical Botany.

Animal, vegetable, and mineral kingdoms, general remarks on—Of plants, their structure and functions—Of the component parts of—Of the epidermis, cortex, liber, alburnum, wood, medulla—Of the circulating powers of plants—Of *secretions*—Products and properties of vegetable matter—Chemical analysis of—Of the aliment of plants—Of absorption, nutrition, exhalation—Of the seed, vital principle, operation of heat, process of vegetation, growth, *modus operandi*—Of the root, varieties of—Trunk and leaves, important functions of—Their influence on the atmosphere and respiratory organs—Experiments of Hales, Priestley, Ingenhouz, Thomson, Sennebier, Ellis, and Knight—Of inflorescence and fructification, component parts of—Of classifications, natural and artificial mode of—The systems of Tournefort, Jussièu, and Linnæus—Advantages of each considered—Of the external qualities of plants, criterion of—Of their spontaneous movements—Sleeping and waking of—Of the sexual system, and fecundation—Of the diseases of plants—Death, decomposition—Utility of to future vegetation—Of the active principles of vegetable matter—Quina, emetin, lupulin, morphia, strychnine, elatin, hyosciama, narcotin, &c.

PART IV.

Pharmacy.

General operations of—Formulæ of the London Pharmacopœia. Theory of Chemical decompositions—Prescription, form of—Dispensing—Incompatible substances—Administration of medicines, rules to be observed in—Forms of exhibition—Doses, practical remarks on.

PART V.

Toxicology.

Poisons, definition of—Division of into animal, vegetable, mineral, and gaseous—Mode of action on the vital powers—Antidotes, form of exhibition—*Post mortem* examinations—Chemical tests, their relation to medical jurisprudence—Literature—Concluding observations.

LECTURES ON MIDWIFERY,

AND ON THE DISEASES OF WOMEN AND CHILDREN,

By Mr. SHIPMAN and Mr. ECCLES.

INTRODUCTORY LECTURE.

1. Comparison between the male and female pelvis—Di-

mensions of the female pelvis—Axis of the pelvis—Dimensions of the child's head—Pelvimeter—External organs of generation—Internal organs of generation—Theory of conception. 2. Anatomy of the gravid uterus—Period at which the ovum enters the uterus—Developement of the ovum—History of the plurality of children—Monstrosities—Anatomy of the placenta. 3. Signs of pregnancy—Quickening—Changes in the situation of the fœtus in uterus—Term of gestation—Diseases of the gestative period. 4. Natural labours—Causes of labour—Signs of labour—Position of patient in labour—General conduct previous to an examination—Examination—Stages of natural labour—Their management—Observations in management of placenta—Rules for exciting uterine action—Hints on Hæmorrhage—Hour-glass contraction—Rules to be observed in extracting placenta—Effects of leaving a portion of placenta—Treatment when retention occurs. 5. Second division of labour—Causes of difficult and tedious labours—Treatment of them—Ergot of rye—Varieties of difficult labour——Distended bladder—Method of passing catheter—Observations on fillet, vectis or lever—Description of short forceps—Nature of labour requiring their use—Application of forceps—History of the long forceps—History of cases requiring craniotomy—Description of perforator and craniotomy forceps—Mode of application—Cæsarean operation—History of the same—Operation of dividing the symphysis pubis—Strictures on inducing premature labour—Mode of operation—On the effect of abstinence on the growth of the fœtus—Crural presentations, three descriptions of—Breech presentations—Observations on the blunt hook—Knee presentations—Shoulder presentations—Operation of turning—Measures to be adopted preparatory to the operation—Application of the fillet—Presentation of the back, belly, and sides—Placenta presentation—Hæmorrhage preceding delivery—Indications of danger from Hæmorrhage—Treatment of hæmorrhage—Transfusion of blood—Ruptured uterus—Presumed causes of ruptured uterus. 5. Accidents occurring after delivery—Diseases of the puerperal state divided into irritative and inflammatory—Distinguishable marks between the two—Treatment of the milder forms of irritation—Milk fever—Swelling of the mammary glands—Miliary fever, its nature and treatment—Intestinal fever—Ephemeral fever, or weed and nysteralogia—Inflammatory diseases—Nature of hysteritis—Symptoms and treatment of the same—Puerperal fever—Convulsions—Phlegmasia dolens—Injury of labia during labor, and treatment—Treatment of ruptured perineum—Rupture of the vagina and bladder. 6. Chronic diseases of females—Inflammation of the mucous membrane of the uterus—Menstruation—Presumed causes of the same—Amenorrhæa—Dysmenorrhæa—Procidentia uteri—Observations on the displacement of the urinary passage in procidentia uteri—Inversio uteri, and the difference of appearances between that and procidentia—Polypus uteri—Tympanitis of the uterus

and fallopian tube—Dropsy and diseased ovaries—Hydatids—Inflammation of the mucous membrane of the vagina—Abscess of the vagina—Polypus of the vagina—Imperforated Hymen—Thickened Hymen—Disease of external organs—Elongation of the labia—Excrescences of labia—Œdema of labia—Cohesion of labia—Pruritis—Various causes of prúritis—Induration of labia—Elongation of the clitoris—Hermaphrodites. 7. Diseases of children divided into irritative and chronic, and those that are inflammatory—Management of still-born children—Of the meconium—Nævus maternus—Redgum—Thrush—Gripes—Convulsions—Teething—Diet of children—Inflammation of the brain—Hydrocephalus—Inflammation of the lungs—Croup—Measles—Small-pox—Matters connected with medical jurisprudence, as signs of delivery, fœticide, infanticide, pregnancy, rape.

Five Lectures on the formation and growth of the ovum in man and animals will complete the Course.

There remain a few cursory remarks to be made on the employment of students' time, which I shall throw into the form of admonition, trusting my readers will believe that this dogmatic style is assumed merely for conciseness and convenience. They are not professed to be any thing like a system of advice, and they are not addressed to those who have unlimited time and means for the study of their profession; they are addressed to those who have but a short time to complete their studies in.

In the choice of a school, a student should be rather guided by the merits of the individual teachers who constitute it than by any advantages that may be held out on account of the institution to which it is attached; for example, if the skill and attention of the surgeons are the same, more may be learned in a small than in a large hospital, because, there being fewer students in the way at the former, cases may be seen and well observed.

Anatomy is learnt—1. By perusing and hearing descriptions of parts; 2. By viewing pictures, casts,

and models of parts; 3. By viewing the parts themselves dissected; or 4. By displaying and demonstrating the parts: but of these modes the three first are merely subservient to the last. No language can describe even a pair of scissors so well, but it may be better understood by a single glance. Pictures, casts, and models can give no information as to the perpetual variations of appearance that the flexible structure of our body is liable to assume. The contemplation of another's dissection can never imbue us with the tact continually required in surgery, of readily displaying and recognizing the presence of minute vessels and nerves amidst effusion of blood, and, to the unpractised eye, confusion of parts. Still, though we treat descriptions, imitations, and preparations, as subservient to actual dissections, they are of great utility. It has been a fashion, however, to treat the second with such unmerited contempt, that I deem it proper in this place to make some endeavour to establish their true merits, and the exact value of the advantages they afford. This it is the more necessary to do because young students have got into a fancy that dissection is every thing; and if they can be found in a dissecting-room up to their ears in filth, cutting and maiming for nine hours a day, they complacently consider they are hard at work, and must perforce become excellent anatomists.

Plates are thus far useful. Previous to taking up the knife, it is well to read once a description of the parts we are about to display, and then go over a plate or two, in order to gain a general idea of them. During dissection, let the plate be placed on a stretcher, and set up before you; by this means a beginner knows what he has to do, which is to show the same parts as are shown in his plate, and learns

to emulate its clearness and beauty. The plate now comes to have a value to him that it never otherwise could have possessed. He understands it is as well as the person who first drew it, and he sees its defects, and appreciates its excellences. Plates are commonly done too finely, and got up (as the booksellers say) in too costly a manner. They ought to be separate from each other, have brief descriptions, and be worked on rough paper, so that they may more properly become the dissecting-room than the study. To gain anatomical knowledge, or to re-acquire it when lost, they are utterly inadequate.

Models are superior to plates, inasmuch as they show what painting never can effect; viz. distinctness of parts, though they be deeply in shade. The expense, however, of models is so great, and they are so delicate, that it seems useless to recommend them to students in general; otherwise they are, next to the dead body, the most excellent expedients for studying anatomy; and they serve very well to teach the uttermost terminations of the nervous system, full dissections of which few students have either time or inclination for.

The value of *preparations* is considerably overrated. I need not animadvert on the many utterly useless things that are collected in large museums; and the solemn farce enacted by some who, having long employed themselves with putting huge lumps of diseased structure into spirits, call the contemplation of these morbid anatomy, may pass without comment. The only preparations students are likely to attempt to learn important anatomy from, are dried dissections of vessels and nerves. But except for following out the minute ramifications of these parts (though for this purpose they are inferior to models) they ought not to be tolerated. They are not, in the slightest degree, like the ori-

ginal parts. Dried and extenuated to threads, distorted by partial desiccation and handling, what sort of information do they afford? They are useful for learning the names of little arteries, just as a plate before dissecting; but have otherwise an injurious tendency, inasmuch as a student learning the arteries in this way is apt to think he is acquainted with their course and relative position, when, in fact, he has learned their existence only. Dried preparations of the viscera, of uncommon distribution of vessels, of herniæ, and of other parts that can only be procured occasionally, are, of course, indispensable.

The practice of *dissection*, confessedly the best, and indeed the indispensable requisite for educating anatomists, demands but a brief notice. I have already said that a good general idea of the parts to be dissected should be gained by reading, and from the inspection of a plate, and that the latter should be placed before the dissector, in order to inform him precisely what he has to display, and moreover to stimulate him to clean his work in a handsome manner, without some little taste for which he cannot hope to become very proficient. It remains only to be observed, that in this, as in every other investigation, we should ask ourselves before we begin what is it we propose to do? The reply is, with respect to dissection, "to prove the assertions contained in anatomical books." It is well then to read over so many pages of your manual, and number all the facts that are asserted. Then you sit down steadily with the knife to display them, in order that you may prove the accuracy of what has been said.

This done, the dissection is over; but it is to be recollected that no one knows a science until he can teach it. So, in order to derive all the advantage you can from dissections, you should describe and

show all you have learned to other persons. *Demonstration* is quite as important as dissection. In the absence of demonstration, drawing or modelling the parts you have dissected is of great use. Very little of the body should be taken at once, and that little should be thoroughly investigated.

You will find this simple process a much easier and pleasanter way of learning anatomy than the method many have fallen into of poring long and intently over Fyfe or Bell, learning by heart the origins and insertions of muscles, buying expensive plates, or dissecting for many hours until you are tired, and yet cannot say that you have verified all that is written on the anatomy of a part, or that you are certain of remembering what you have seen of it.

In attending lectures on anatomy solely, no one need think of taking notes, because anatomy, as well as operative surgery and midwifery, is to be learned so that the brain should be our only book of reference. Nothing on these subjects is to be left uncertain or undecided; all is to be amalgamated with the mind itself during our course of dissections. But physiological hypotheses, and, in some degree, the details of medicine, especially require that we should form for ourselves a code, or text-book, whereunto we may from time to time recur. Thence taking notes is very proper. Where there is time the best method is to take short notes during lecture, and then write out more fully on our return home, because this process strengthens the powers of apprehension and memory. The same observation applies to reading. It would be ridiculous to waste much time in reading anatomy; but medicine and physiology should form the subject of some daily readings.

The usual failing even of the most intelligent stu-

dents is surrendering their judgment into the hands of their teacher; a sort of mental slavery defensible only in boys. *Nullius addictus jurare in verba magistri* you may say, though the proverb *is* rather musty. This point, also, will be mentioned to you by every teacher in London, but still nobody attends to it. Medical students invariably become bigotted to the particular school they have been educated at, and to the particular teacher they have attended; and it is very natural; for he who knows nothing must be astonished at little, and he who, like the Mahometan, will read but one book, must, in consequence, think that book the finest in the world. It is true, you should pay deference to the authority of the aged and experienced, but you will do well to observe that authority has weight only in matters of experience, and none in matters of reasoning. If a physician or surgeon in long and extensive practice should say that, "in nine cases out of ten, mercury will cure an iritis (for I have seen it effectual in that proportion)," it would be presumptuous and ridiculous for a student to dispute the fact. But if the physician proceeds further to say, I am of opinion, therefore, that mercury is a specific in inflammation, the student ought to treat the opinion or inference with no more respect than though it came from a patient. He ought to examine the steps of the reasoning, declare the point where they became fallacious, and reject the hypothesis without ceremony; for every man has in his own brain the power of testing the accuracy of an inference from allowed facts, and, for my part, I think all have that power in an equal degree. It must be remembered, however, that even experience is a most deceitful thing; that the experience of one surgeon is contradicted by that of another, and that the accumulated experience of different times and countries often contradicts the most extensive individual prac-

tice. Even then, on matters of fact, it is not well to pin your faith on one man, or set of men, or on the practice of a particular school. If time and circumstances permit, a medical student in this town should divide his attendance. One six months let him attend one hospital, the next another; one course of lectures here, another there. Nothing can be conceived more absurd than for a man to mix himself with what they call a *school*, professing himself tutored only in that, and convinced of its superiority over every other, merely because he has attended none else. The eclectic is the school whence all that is valuable has constantly sprung. For suppose you are attending the lectures of a particular professor who says that large incisions are good for certain cases of erysipelas. You go with him to his hospital, you see many recover, and he cries, behold the proof of my assertion. But this should not be enough to satisfy you; go to other hospitals, and observe whether an equal proportion of patients recover under an opposite method of treatment.

If a tendency to error exists in surgery, how much more must it exist in medicine and physiology. In both these sciences you will find equal necessity for hearing both sides of many important questions, and to exercise the mind, without bias, in deciding for yourselves. Whenever you hear a physiological opinion, always ask yourself what is the proof of this: if it does not admit of direct proof (and few physiological facts do), ask yourself how great is its probability, in order to discover which, take up the other side and try what can be said against it, and examine then on which side the balance truly lies. Some teachers deprecate altogether the study of physiology as a metaphysical and uncertain science, of which the cultivation is rather delusive than otherwise, and apt to

interfere with matters of fact. This sort of argument against speculative knowledge is always held by those weak-headed persons whose reason is not steady enough to distinguish between what is doubtful, what proven, and what probable in speculation, and who, finding us ignorant of many things in physiology, get over the trouble of investigating it by quietly supposing us ignorant of all. But these are not to be contended with, but trampled on.

I need not say that a student ought to be regular in his attendance on hospital practice. This advice will be reverberated on your ears at every introductory lecture you may listen to. But I may caution you that it is not enough to *attend*, it is necessary to *observe*. It is not by forming one amongst a hundred pupils who rush up and down stairs at the heels of an hospital surgeon, that men are qualified to practise surgery. Medical men generally, even those of the highest rank, and, of course, students, have a notion that a man cannot fail to be a good surgeon if he has seen plenty of cases. Can we forget that all the greatest improvements in our profession have been made by men who had not when they wrote arrived at extraordinary practice? Shall we compare Pott or Cheselden with Hunter? How many diligent students have we seen during our education who never once missed attending lecture, or going round the hospital for years together, and who yet are nothing. Neither is future eminence to be prognosticated of those who betray an extreme anxiety to see what are called interesting cases, (that is very uncommon and desperate ones,) to the neglect of ordinary and perpetually recurring diseases. Ordinary cases ought to be most interesting to the student. It is better worth while to watch the progress of a concussion of the brain than of hydrophobia or elephantiasis. A man who knows how to cure an inflammation of the belly, or to reduce a strangulat-

ed hernia, is a more useful member of society than he who can adroitly tie the aorta or cut into the pharynx. To watch attentively the symptoms of all cases—to trace their consequences, but above all, to think constantly on their causes, is the way to become grounded in our profession ; and he who will rigorously follow this laborious investigation, shall acquire more solid professional information from seeing nine or ten cases per diem, than a mere inspector can acquire from forty, and more than any one can acquire who is encumbered with more than a hundred. The keeping an accurate register of hospital cases is of the utmost utility. But those who have but a short time to remain in town should not frame them on too extended a scale, especially as they are at present pretty fully reported by the press. They should not fail, however, to note down such matters as appear important, which seem inexplicable, or which tend to throw any light on surgical principles.

Concerning chemistry, I have only one suggestion to make. That no one can avail himself of this science, for any useful purpose, merely by attending lectures.—He ought to perform the working with his own hands,—I confine myself, of course, to recommend the practice only of so much chemical manipulation as is necessary to the analysis of poisons and of animal substances.

Before I conclude I have a few observations to make on the acquisition of collateral information. You will hear a great deal of vague declamation concerning the extent of general information necessary to make an accomplished surgeon. They will tell you that he must understand mechanics, chemistry, optics, acoustics, botany, comparative anatomy, natural history, &c. &c. &c. Now, it is very fortunate that successful surgeons may exist without this encyclopædial education, for if they could not,

the public health would be in a sorry plight. But the truth is, that to the explication of physiology only a small part of each of the above-mentioned sciences has any relation. Of botany no more is available than what is called vegetable physiology. Grant two axioms very easy of comprehension in optics and acoustics, and you grant all that is necessary to explain the phenomena of sight and hearing. Even the value of comparative anatomy is considerably over-rated. To this science we owe, indeed, the *discovery* of almost all that is valuable in physiological science. Hunter borrowed hence the light which he shed upon physiology generally, and which has made its influence felt even in the remotest branches of our art. But it is not your business to attempt invention until your mind is fraught with established knowledge; and if when this is accomplished you are inspired with an ardour to add something to the stock of human knowledge it is well; but do not attempt to learn any for its sake only (as girls learn French and music, that their mothers may call them accomplished); but enter upon the study of collateral science to look out for facts that may bear upon the physiology of man. Throw out of your minds all the extraneous matter that surrounds the precious information you may thus cull, and despise every thing that does not tend to the solution of the great problem to which your life is to be devoted, namely, the relief of injury and disease. No information need be despised, but it should never wean us from our particular profession.

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Dublin, Nov. 7, 1829.